Claims

What is claimed is:

1. A method of provisioning storage from a storage area network, comprising:

receiving a request for a storage size and storage configuration from a storage area network according to a storage profile;

identifying a storage device pool of storage devices according to a storage device candidate strategy;

selecting a media unit provisioning strategy based upon the type of storage configuration specified in the storage request;

generating media unit solutions using the media unit provisioning strategy and sequence of storage devices in the storage pool;

determine if the media unit provisioning strategy produced a solution for the requested storage configuration; and

provisioning a media unit solution in response to the determination.

2. The method of claim 1 wherein the storage configuration describes a type of storage selected from a set of storage types including: a RAID storage type, a stripe storage type, a replication storage type and a single physical unit storage type.

3. The method of claim 1 wherein the storage profile includes one or more attributes for characterizing storage devices used in storage area network selected from a set of attributes including: maximum transfer rate, access time, storage reliability, RAID level, single or multiple connectivity, storage redundancy limit, long-term transfer rate, last-byte latency, availability, reliability and correctness violations.

4. The method of claim 1 wherein the storage device candidate strategy identifies a set of storage devices having at least one media unit that satisfies the storage profile.

5. The method of claim 4 wherein the storage device candidate strategy further includes sorting the storage device candidates in order of decreasing provisional storage amounts.

6. The method of claim 4 wherein the storage device candidate strategy further includes using a predetermined sequence of selected storage devices to identify and place

the storage devices in a sequence.

7. The method of claim 4 wherein the storage device candidate strategy further includes ordering the set of storage devices in a least-recently-used sequence.

8. The method of claim 4 wherein the storage device candidate strategy further includes ordering the set of storage devices according to a least-cost sequence.

9. The method of claim 1 wherein the media unit provisioning strategy for provisioning media unit solutions from a storage device is selected from a set of media unit provisioning strategies including determining if a media unit provides the requested storage size solution, a media unit closely matches the requested storage size solution, a media unit exceeds the requested storage size solution and can be sliced and a concatenation of media units in the storage device from large to small exists that satisfies the storage size request.

10. The method of claim 1 wherein determining if the media unit provisioning strategy produced a solution includes taking the first media unit provisioning solution generated.

11. The method of claim 1 wherein determining if the media unit provisioning strategy produced a solution includes evaluating a set of media unit provisions and taking the least cost solution.

12. The method of claim 1 implemented using an object-oriented programming language capable of execution on a computer system.

13. An apparatus for provisioning storage from a storage area network, comprising:

a processor capable of executing instructions;

a memory containing instructions when executed on the processor receives a request for a storage size and storage configuration from a storage area network according to a storage profile, identifies a storage device pool of storage devices according to a storage device candidate strategy, selects a media unit provisioning strategy based upon the type of storage configuration specified in the storage request, generates media unit solutions using the media unit provisioning strategy and sequence of storage devices in the storage pool, determines if the media unit provisioning strategy

produced a solution for the requested storage configuration and provisions a media unit solution in response to the determination.

14. The apparatus of claim 13 wherein the instructions describe the storage configuration as a type of storage selected from a set of storage types including: a RAID storage type, a stripe storage type, a replication storage type and a single physical unit storage type.

15. The apparatus of claim 13 wherein the instructions associated with the storage profile includes one or more attributes for characterizing storage devices used in storage area network selected from a set of attributes including: maximum transfer rate, access time, storage reliability, RAID level, single or multiple connectivity, storage redundancy limit, long-term transfer rate, last-byte latency, availability, reliability and correctness violations.

16. The apparatus of claim 13 wherein the instructions associated with a storage device candidate strategy identifies a set of storage devices having at least one media unit that satisfies the storage profile.

17. The apparatus of claim 16 wherein the storage device candidate strategy further includes instructions that sort the storage device candidates in order of decreasing provisional storage amounts.

18. The apparatus of claim 16 wherein the storage device candidate strategy further includes instructions that use a predetermined sequence of selected storage devices to identify and place the storage devices in a sequence.

19. The apparatus of claim 16 wherein the storage device candidate strategy further includes instructions that sort the set of storage devices in a least-recently-used sequence.

20. The apparatus of claim 16 wherein the storage device candidate strategy further includes instructions that order the set of storage devices according to a least-cost sequence.

21. The apparatus of claim 1 further includes instructions that select the media unit provisioning strategy for provisioning media unit solutions from a storage device from a set of media unit provisioning strategies including determining if a media unit provides

the requested storage size solution, a media unit closely matches the requested storage size solution, a media unit exceeds the requested storage size solution and can be sliced and a concatenation of media units in the storage device from large to small exists that satisfies the storage size request.

22. The apparatus of claim 13 wherein determining if the media unit provisioning strategy produced a solution includes instructions that take the first media unit provisioning solution generated.

23. The apparatus of claim 13 wherein determining if the media unit provisioning strategy produced a solution includes instructions that evaluate a set of media unit provisions and taking the least cost solution.

24. The apparatus of claim 13 implemented using an object-oriented programming language capable of execution on a computer system.

25. An apparatus for provisioning storage from a storage area network, comprising:

means for receiving a request for a storage size and storage configuration from a storage area network according to a storage profile;

means for identifying a storage device pool of storage devices according to a storage device candidate strategy;

means for selecting a media unit provisioning strategy based upon the type of storage configuration specified in the storage request;

means for generating media unit solutions using the media unit provisioning strategy and sequence of storage devices in the storage pool;

means for determine if the media unit provisioning strategy produced a solution for the requested storage configuration; and

means for provisioning a media unit solution in response to the determination.